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EXAMINER	
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ART UNIT	PAPER NUMBER
2432	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/677,273	LINARES, MICHEL	
	Examiner	Art Unit	
	MARTIN JERIKO P. SAN JUAN	2432	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is a response to Applicant's Remarks filed on April 23, 2009.

Claims 1-8 are currently pending.

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Arguments

1. Applicant's arguments, see Remarks and an Official translation of the priority document (FR Application No. 0212404) in order to perfect the claim for priority, filed April 23, 2009, with respect to the rejection(s) of claim(s) 1-8 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made.

Claim Rejections - 35 USC § 103

1. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swensen [US 5420883] in view of Bodin [US 5987139], Lonn [NPL 1999], and Fuhrmann [US 2003/0067873 A1].

Regarding claim 1, Swensen teaches a secure method of exchanging information messages sent successively from a sending platform to a receiving platform utilizing TDMA [Swensen 8: 9-28], the method comprising: b) an information message transmission sequence in which: said information messages are sent successively by sending platform at given time intervals ΔT_E [Swensen 6: 51-57 –length of TDMA

cycle] based on a clock specific to said sending platform [Swensen 17: 16-36], so that said first message M_1 is sent at date t_1 on said clock and the n^{th} message M_n is sent at the date t_n [Swensen 6: 53-54], and the messages received by receiving platform are processed as a function of their reception date t_r [Swensen 14: 22-25] based on a clock specific to receiving platform said clock of said receiving platform [Swensen 17: 16-36] being synchronized to said date t_1 on receiving said first message M_1 [Swensen 17: 58-59].

Swensen does not explicitly teach each message M_n being coded by means of a dynamic code C_n specific to said date t_n of sending said message, and said messages received in a same observation time window F_n containing t_n with a width ΔT_F are decoded using a decoding sequence DC_n adapted to decode said dynamic code C_n, regardless of an unsuccessful decoding of the previous message M_{n-1}.

Bodin teaches encrypting messages utilizing TDMA communications between a transmitter and a receiver, the method wherein each message M_n being coded by means of a dynamic code C_n specific to said date t_n of sending said message [Bodin 4: 15-51 --PSm' exclusive or with non-encrypted information], and said messages received in a same observation time window F_n containing t_n with a width ΔT_F [Bodin 1: 33-35 --length of each time slot] are decoded using a decoding sequence DC_n adapted to decode said dynamic code C_n [Bodin 4: 15-51 --PSm' exclusive or with encrypted information since this would have been the inverse of an exclusive or encryption operation], regardless of an unsuccessful decoding of the previous message M_{n-1} [Bodin

1: 15-51 --Encryption/decryption of messages is not dependent on previous message data.].

It would have been obvious to one of ordinary skilled in the art at the time of invention to modify Swensen by encrypting messages as a function of the time slot as taught by Bodin. The suggestion/motivation would have been to enhance security since encryption would also be dependent on the time slot assignment [Bodin 3: 64-67].

Swenson in view of Bodin is silent about an initialization sequence in which an initialization message containing information relating to a date t_1 for sending a first information message M_1 is exchanged between sending platform and receiving platform so that sending platform and receiving platform know said date t_1 for sending said first information message M_1.

Lonn teaches TDMA communications, the method comprising an initialization sequence in which an initialization message containing information relating to a date t_1 for sending a first information message M_1 is exchanged between sending platform and receiving platform so that sending platform and receiving platform know said date t_1 for sending said first information message M_1 [Lonn Section 1: Par 3-5].

It would have been obvious to one of ordinary skilled in the art at the time of invention to modify Swenson in view of Bodin by having an initialization sequence as taught by Lonn. The suggestion/motivation would have been to synchronize TDMA communication between two parties upon start of a communication.

Swensen in view of Bodin, and Lonn does not teach clocks specific to sending platform have a sending time tolerance, δ.

Fuhrmann teaches that in TDMA communications, local independent clocks are used with a tolerance of, δ [Fuhrmann 2: 0018].

It would have been obvious to one of ordinary skilled in the art at the time of invention to modify Swenson in view of Lonn by incorporating a tolerance, δ, in the communications as taught by Fuhrmann. The suggestion/motivation for combining would have been to increase the precision of synchronizing TDMA communication between transmitters and receivers by knowing that independent clocks have tolerances of δ [Fuhrmann 2: 0018].

Swenson in view of Bodin, Lonn, and Fuhrmann would have taught that $t_n = t_1 + (n-1) * \Delta T_E + \delta$ since this is merely describing in equation form the timeslot based on messages being sent with respect to each other at different time cycles incorporating the tolerance of the clock. Swensen, inview of Bodin, Lonn and Fuhrmann teach every element/aspect of this equation.

With regard to claim 2, Swensen in view of Bodin, Lonn, and Fuhrmann teach the secure method claimed in claim 1 of exchanging information messages, wherein during said initialization sequence a) a coded initialization message M_0 is sent from said sending platform to said receiving platform and a coded initialization message M'_0 is sent from said receiving platform to said sending platform, said initialization messages M_0, M'_0 containing the information relating to said date t_1 for sending said first

information message M_1, and said initialization messages M_0, M'_0 being decoded by said sending platform and said receiving platform which then know said date t_1 for sending said first information message M_1 [Swensen 13: 26-47 – Swensen discloses the means for Control stations and Wayside Stations to communicate and achieve synchronized communication.] [Lonn Section 1: Par 3-5].

With regard to claim 3, Swensen in view of Bodin, Lonn, and Fuhrmann teach the secure method claimed in claim 1 of exchanging information messages, wherein, if said first message M1 is not received within an allotted time after reception of said initialization message, said clock of said sending platform is automatically synchronized to said date t1 at the moment corresponding to the end of the allotted time [Lonn Section 2: 6 --Not receiving M1 within an allotted time after reception of said initialization message would have meant that the system is out of synchronization, and the system automatically enters resynchronization teaching "automatically synchronized to said data t1 at the moment corresponding to the end of the allotted time."].

With regard to claim 4, Swensen in view of Bodin, Lonn, and Fuhrmann teach the secure method of exchanging information messages, wherein said observation window Fn corresponds to a time window $[t_1 + (n-1) * \Delta T_E - \Delta T_F * \varepsilon, t_1 + (n-1) * \Delta T_E + \Delta T_F * (1-\varepsilon)]$; where the width of the observation window ΔT_F satisfies the equation $\Delta T_F < \Delta T_E$ and ε is from 0 to 1. [This equation would have been taught by Swenson in view of Bodin, Lonn, and Fuhrmann, since this is merely describing in equation form the time coordinate of a

certain timeslot in a given time period. Swensen, in view of Bodin, Lonn, and Fuhrmann teach every element/aspect of this equation.]

With regard to claim 5, Swensen in view of Bodin, Lonn, and Fuhrmann teach a secure method of exchanging information messages, wherein a clock synchronization signal is sent regularly by sending platform between sending messages M_n. [Swensen, Col 19, Ln 64-68].

With regard to claim 6, Swensen in view of Bodin, Lonn, and Fuhrmann teach a secure method of exchanging information messages, where information messages decoded by receiving platform are transmitted to an information processing module [Swensen, Fig 11 – Messages regarding train speed, update, and control are transmitted to various information processing modules.].

With regard to claim 7, Swensen in view of Bodin, Lonn, and Fuhrmann discloses a secure method of exchanging information messages, where messages received by receiving platform during an observation window F_n are stored sequentially in a memory able to store only one message at a time and only the message stored in memory at the end of observation window F_n is transmitted to said information processing module. [Swensen, Fig 22-26 – demultilplexing data and processing.]

With regard to claim 8, Swensen in view of Bodin, Lonn, and Fuhrmann discloses a secure method of exchanging information messages, where sending platform is part of a centralized control station of a rail traffic supervision and control system, receiving platform is part of a fixed installation disposed alongside a rail track, and information processing module is a control unit on board a train circulating on a track section associated with fixed installation. [Swensen, Fig 1]

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARTIN JERIKO P. SAN JUAN whose telephone number is (571)272-7875. The examiner can normally be reached on M-F 8:30a - 6:00p EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system.

/Martin Jeriko San Juan/
Examiner, Art Unit 2432

/Gilberto Barron Jr./
Supervisory Patent Examiner, Art Unit 2432